

**What is claimed is:**

**1. A power source control method, comprising:**

**detecting a voltage of a logic circuit power source in a module by a voltage**

**detecting device;**

5 **performing supply/interruption of a voltage from a drive power source to a control circuit by a power source supply/interruption device;**

**outputting a signal indicating a voltage drop of said logic circuit power source by said voltage detecting device upon detection of the voltage drop;**

**causing said power source supply/interruption device to be in an interruption**

10 **state, and**

**causing a compulsory discharge device to be in an operation state to thereby control discharge so that a residual charge of a drive circuit is forcibly discharged by said compulsory discharge device before the voltage of said logic circuit power source becomes 0V.**

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**2. A power source control method, comprising:**

**detecting a voltage of a logic circuit power source in a module by a voltage detecting device;**

**performing supply/interruption of a voltage from a drive power source to a**

20 **control circuit by a power source supply/interruption device;**

**causing a residual charge of a drive circuit to forcibly discharge by a compulsory discharge device when said power source supply/interruption device is performing interruption; and**

**upon detection of a voltage rise of said logic circuit power source, said voltage**

25 **detecting device delaying the output of a signal indicating the voltage rise for a fixed**

time until the voltage of said logic circuit power source becomes stable at a predetermined voltage, whereby together with causing said power source supply/interruption device to be in a power supply state, said compulsory discharge device is controlled to be in an open state.

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**3. A power source control circuit, comprising:**

**a plurality of power sources including a logic circuit power source in a module and a drive power source,**

**a voltage detecting device to detect a voltage of said logic circuit power source,**

10 **and**

**a power source supply/interruption device to perform supply/interruption of a voltage from said drive power source to a control circuit, wherein:**

**a compulsory discharge device is provided for forcibly discharging a residual charge of a drive circuit when said power source supply/interruption device is performing interruption, and**

**upon detecting a voltage drop of said logic circuit power source, said voltage detecting device outputs a signal indicating the voltage drop, whereby together with causing said power source supply/interruption device to be in an interruption state, said compulsory discharge device is caused to be in an operation state to thereby forcibly discharge the residual charge of said drive circuit by said compulsory discharge device before the voltage of said logic circuit power source becomes 0V.**

**4. A power source control circuit, comprising:**

**a plurality of power sources including a logic circuit power source in a module**

25 **and a drive power source,**

**a voltage detecting device to detect a voltage of said logic circuit power source,**

**and**

**a power source supply/interruption device to perform supply/interruption of a voltage from said drive power source to a control circuit, wherein:**

5       **a compulsory discharge device is provided for forcibly discharging a residual charge of a drive circuit when said power source supply/interruption device is performing interruption, and**

**upon detection of a voltage rise of said logic circuit power source, said voltage detecting device delays the output of a signal indicating the voltage rise for a fixed time**

10      **until the voltage of said logic circuit power source becomes stable at a predetermined voltage, whereby together with causing said power source supply/interruption device to be in a power supply state, said compulsory discharge device is caused to be in an open state.**

15      **5. The power source control circuit according to Claim 3, wherein discharge electric current restriction device is provided to prevent a large current from flowing between said power source supply/interruption device and said compulsory discharge device when both devices are in operation at the same time.**

20      **6. The power source control circuit according to Claim 4, wherein a discharge electric current restriction device is provided to prevent a large current from flowing between said power source supply/interruption device and said compulsory discharge device when both devices are in operation at the same time.**

7. The power source control circuit according to Claim 3, wherein said power source supply/interruption device includes a drive switching element connected to the power source, which is switched to the interruption state due to a signal indicating that said voltage detecting device detects a voltage drop and which is 5 switched to a discharge state due to a signal indicating that said voltage detecting device detects a voltage rise, and

wherein said compulsory discharge device includes a discharge switching element connected to earth, which is switched to an operating state due to a signal indicating that said voltage detecting device detects a voltage drop and which is 10 switched to an open state due to a signal indicating that said voltage detecting device detects a voltage rise.

8. The power source control circuit according to Claim 5, wherein said discharge electric current restriction device includes a resistor connected in series 15 between said power source supply/interruption device and said compulsory discharge device.

9. The power source control circuit according to Claim 7, wherein said power source supply/interruption device includes a first control switching element connected 20 to earth and a plurality of resistors in addition to said drive switching element.

10. The power source control circuit according to Claim 7, wherein said compulsory discharge device includes a second control switching element connected to a control logic circuit power source and a plurality of resistors in addition to said 25 discharge switching element.

11. The power source control circuit according to Claim 7, wherein said drive switching element, said discharge switching element, and first and second switching elements are transistors which have said respective characteristics.

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12. The power source control circuit according to Claim 7, wherein said discharge switching element is a MOSFET also serving as said discharge electric current control resistor due to an internal resistor.

10 13. The power source control circuit according to Claim 3, wherein said voltage detecting device judges that a voltage drop has been detected when the voltage of said logic circuit power source becomes lower than a predetermined threshold value and judges that a voltage rise has been detected when the voltage of said logic circuit power source becomes higher than a predetermined threshold value.

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14. The power source control circuit according to Claim 4, wherein said voltage detecting device judges that a voltage drop has been detected when the voltage of said logic circuit power source becomes lower than a predetermined threshold value and judges that a voltage rise has been detected when the voltage of said logic circuit power source becomes higher than a predetermined threshold value.

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15. The power source control circuit according to Claim 13, wherein said voltage detecting device does not immediately output the signal indicating a voltage

**rise, but delays output of the signal for a fixed time so that the signal is outputted after the voltage of said logic circuit power source is stable at a voltage of operation.**

16. **The power source control circuit according to Claim 3, wherein said voltage detecting device shares a reset circuit which resets said logic circuit and a control device thereof when said voltage detecting device has detected a voltage drop of said logic circuit power source and releases the reset when a voltage rise has been detected so that the control device of said logic circuit does not go out of control.**

10       **17. An image forming apparatus comprising a power source control circuit, comprising:**

**a plurality of power sources including a logic circuit power source in a module and a drive power source,**

**a voltage detecting device to detect a voltage of said logic circuit power source,**

15       **and**

**a power source supply/interruption device to perform supply/interruption of a voltage from said drive power source to a control circuit, wherein:**

**a compulsory discharge device is provided for forcibly discharging a residual charge of a drive circuit when said power source supply/interruption device is performing interruption, and**

**upon detecting a voltage drop of said logic circuit power source, said voltage detecting device immediately outputs a signal indicating the voltage drop, whereby together with causing said power source supply/interruption device to be in an interruption state, said compulsory discharge device is caused to be in an operation**

**state to thereby forcibly discharge the residual charge of said drive by said compulsory discharge device before the voltage of said logic circuit power source becomes 0V.**